



TLC FINAL TERM EXAMINATIONS 2021
SIMEON

LEARNER'S NAME:

CLASS:

SIMEON PAPER 2

1 hour 30 minutes

Additional Materials: Foolscap / Lined paper

READ THESE INSTRUCTIONS FIRST

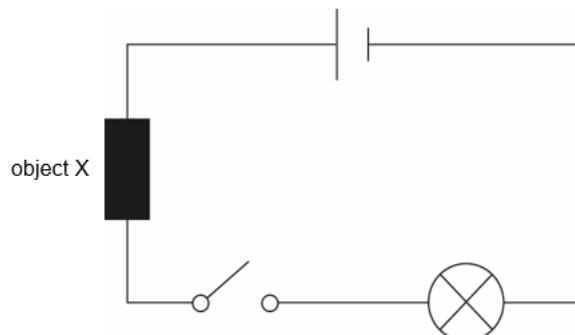
1. Candidates to answer **ALL** questions on the Question Paper.
2. Write in **DARK BLUE** or **BLACK** pen. Draw diagrams / graphs in **pencil**.
3. Do not use **correction fluid /tape**.
4. Take note of the number of marks given in brackets [] at the end of each question.
5. Dictionaries are not allowed.
6. Total marks for the paper is **50**.

DO NOT turn exam paper over until instructed to do so

There are **NINE (9)** questions in this Question Paper. Answer **ALL** questions.

[TOTAL MARKS: 50]

1. Study this circuit diagram



When the switch is closed, the lamp or bulb lights up.

a) Which of these materials can object X made of? Tick the correct boxes.

[6]

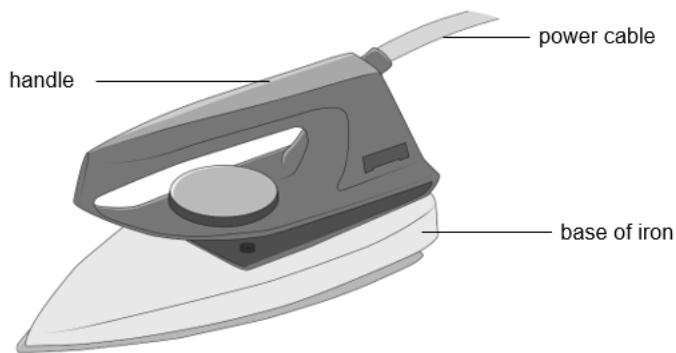
Aluminium	<input type="checkbox"/>
Copper	<input type="checkbox"/>
Cotton	<input type="checkbox"/>
Glass	<input type="checkbox"/>
Gold	<input type="checkbox"/>
Graphite	<input type="checkbox"/>
Iron	<input type="checkbox"/>
Paper	<input type="checkbox"/>
Plastic	<input type="checkbox"/>
Rubber	<input type="checkbox"/>
Silver	<input type="checkbox"/>
Wood	<input type="checkbox"/>

b) Explain your answer in (a).

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.....

[2]

2. This picture shows an electric iron. The electric iron uses electricity to function.



a) The base of the electric iron is connected to wires inside the iron. These wires are connected to the power cable. Explain why the base of the iron is made of metal.

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[2]

b) Why is the handle of the electric iron made of plastic?

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[2]

c) Why is it dangerous to use electric iron when your hands are wet?

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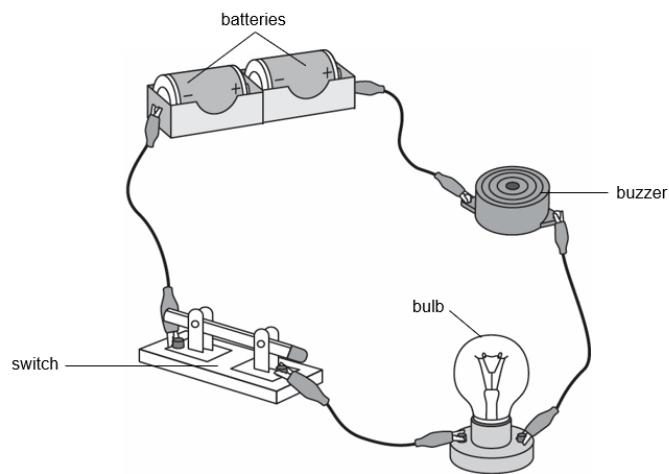
[1]

d) Should you use the electric iron if the insulation of the power cable is frayed or damaged? Explain your answer.

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[3]

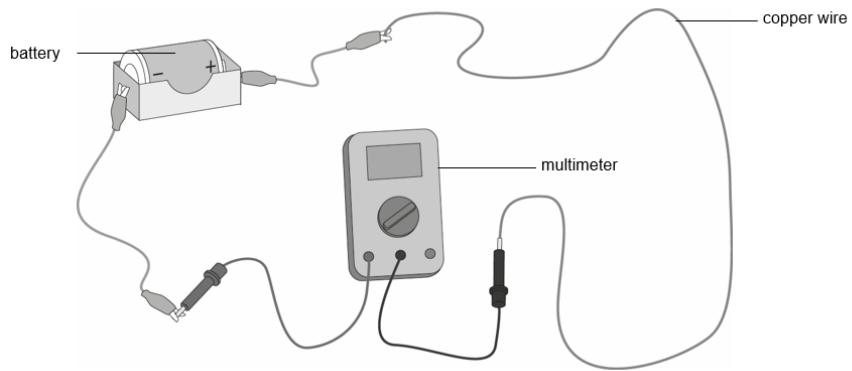
3. This electric circuit contains a bulb, a buzzer and two batteries connected in series.



In this box, draw a circuit diagram of the above electric circuit using symbols.

[5]

4. A multimeter is used to measure the electric current in this electric circuit.



Complete the table to show how each change in the electric circuit affects the electric current flowing through the circuit.

[5]

Change in the electric circuit	Will the electric current be larger, smaller, the same or zero?
Replacing the copper wire with a longer copper wire of the same type and thickness	
Replacing the copper wire with a thicker copper wire of the same type and length	
Replacing the copper wire with an iron wire of the same length and thickness	
Replacing the copper wire with a silver wire of the same length and thickness	
Replacing the copper wire with a plastic string of the same length and thickness	

5.

a) A 50-kg robot was brought to a planet that has a larger mass than the Earth. The robot was dropped from a space vehicle onto the surface of the planet. What force pulled the robot to the surface of the planet?

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[1]

b) Will the weight of the robot increase or decrease when it is brought from the Earth to the planet? Explain your answer.

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[2]

c) What is the unit and symbol used to measure the weight of the robot?

Unit:

Symbol:

[2]

6. State the type of force in the table.

Effect of the force	Type of force
Prevents a pen from slipping out of your hand	
Causes rain to fall	
Gives you your weight	
Makes it difficult for you to go up a flight of stairs	
Slows down a falling leaf	
Stops a ball that is rolling on the beach	

[6]

7. An object moving in a straight line is given a push in the opposite direction.

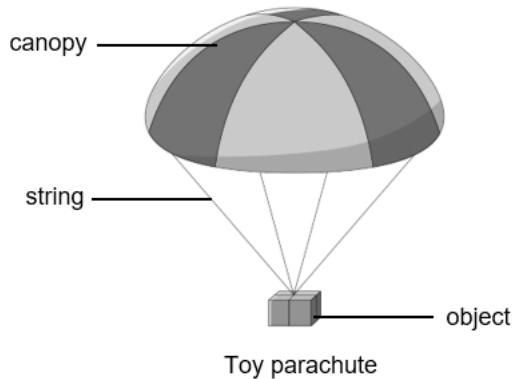
Which of the following are possible effects of the force?

Tick the correct answers.

Effects	Possible effects
The object slows down while moving in the same direction	
The object speeds up while moving in the same direction.	
The object stops moving.	
The object changes direction.	
The object continues to move in the same direction at the same speed	

[3]

8. Billy investigated whether the surface area of the canopy of a toy parachute affects how fast it falls to the ground.



He uses three toy parachutes, A, B and C. Objects of the same mass are each attached to a toy parachute. The toy parachutes are dropped from the same height. Billy records the time taken for each toy parachute to fall to the ground.

The table shows the results of his investigation.

Toy parachute	Time taken for it to fall to the ground in s
A	1.0
B	1.5
C	2.0

a) From the results, which toy parachute, A, B or C, has the largest surface area? Explain your answer.

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[2]

b) If Billy carries out his investigation in a place with no air, will the time taken for the parachutes to fall to the ground be the same or different from one another? Explain your answer.

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[3]

c) What can Billy do to ensure that the results of his investigation are more reliable?

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[1]

9. Rahim was given a mixture of three solids, A, B and C. To separate them, he sieved the mixture. Solid A remained on the sieve while solids B and C passed through it. Rahim then added water to the mixture of solids B and C. He stirred and filtered the resulting mixture. Solid C remained on the filter paper while solid B and water passed through it.

a) What could solids A, B and C be? Tick () the correct answer.

A	B	C	Result
marble chips	copper sulfate crystals	chalk powder	
rock sugar	fine salt	instant coffee	
talcum powder	baking powder	fine sugar	
pebbles	sand	iron filings	

[1]

b) Describe a method that Rahim can use to remove the water from the mixture of solid B and water.

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[3]

THIS IS THE END OF THE QUESTION PAPER